To: Goran Obradovic[goran.obradovic@dominionvoting.com]; Dalibor Milovanovic[dalibor.milovanovic@dominionvoting.com]; Dragoljub Petrovic[dragoljub.petrovic@dominionvoting.com]
Cc: Ranko Stamatovic[ranko.stamatovic@dominionvoting.com]; Nebojsa Pirocanac[nebojsa.pirocanac@dominionvoting.com]; Djordje Matijevic[djordje.matijevic@dominionvoting.com]
From: Nenad Peric
Sent: Tue 8/4/2020 12:32:12 PM
Subject: RE: Boothole attack for Linux and Windows

Hi Goran,

I've talked to Djordje and did some more testing of the Prime and Classic devices.

Items:

- **Prime** – I double-checked, and upon entering BIOS password, it will NOT allow booting of a different device without that password (my bad). Secure Boot exists in BIOS and it would be possible to further increase security by adding keys to the Secure Boot for the primary boot device and an update USB stick.
- **Classic** – Will allow booting of a different device even with BIOS password set, unfortunately. We can (and should) ask Avalue to change this and disable the boot menu when a BIOS password is set. Secure Boot does not exist on this device, but it is EFI capable, so this may be something else to ask Avalue to implement in Classic BIOS.
- **Documentation** – Our documentation already indicates that a BIOS password should be set for both devices.

Suggestions:

- **Short term** – We can mitigate the issue by password protecting the boot device selection on the Classic.
- **Long term** – It would be good if we could spend some time on implementing Secure Boot, or a similar protection measure.

Thanks,

NENAD PERIC | SOFTWARE DEVELOPER III

215 Spadina Avenue, Suite 200, TORONTO, ON M5T 2C7
1.866.654.8683 | DOMINIONVOTING.COM

416.762.8683 x 440 OFFICE

From: Goran Obradovic
Sent: Tuesday, August 4, 2020 1:07 PM
To: Nenad Peric; Dalibor Milovanovic; Dragoljub Petrovic
Cc: Ranko Stamatovic; Nebojsa Pirocanac; Djordje Matijevic
Subject: Re: Boothole attack for Linux and Windows

Thanks Pero. Someone will have to explain this to me. I hope we don't have a serious issue with security on ICX.

GORAN OBRADOVIC | VP ENGINEERING AND GM EUROPE
DOMINION VOTING
215 Spadina Avenue, Toronto, Ontario, M5T 2C7
1.866.654.8683 | DOMINIONVOTING.COM
866.654.8683 OFFICE (ext 401)

From: Nenad Peric <nenad.peric@dominionvoting.com>
Sent: Monday, August 3, 2020 10:15:34 AM
To: Goran Obradovic <goran.obradovic@dominionvoting.com>; Dalibor Milovanovic <dalibor.milovanovic@dominionvoting.com>; Dragoljub Petrovic <dragoljub.petrovic@dominionvoting.com>
Cc: Ranko Stamatovic <ranko.stamatovic@dominionvoting.com>; Nebojsa Pirocanac <nebojsa.pirocanac@dominionvoting.com>; Djordje Matijevic <djordje.matijevic@dominionvoting.com>
Subject: RE: Boothole attack for Linux and Windows

Hi Goran,

I don't think the reason is the lack of Secure Boot, because when I activated Secure Boot on Prime, the ONLY available option was my USB stick (GRUB 1.1.5 does not support EFI/Secure Boot).

I was able to boot of a USB stick by pressing key that allowed me to select a boot device. I did not enter BIOS in order to boot of a USB stick.

Thanks,

NENAD PERIC | SOFTWARE DEVELOPER III

215 Spadina Avenue, Suite 2[redacted], TORONTO, ON M5T 2C7
1.866.654.8683 | DOMINIONVOTING.COM

416.762.[redacted]683 x 440 OFFICE

From: Goran [redacted]bradovic
Sent: Friday, July 31, 2020 3:03 PM
To: Nenad Peric; Dalibor Milovanovic; Dragoljub Petrovic
Cc: Ranko Stamatovic; Nebojsa Pirocanac; Djordje Matijevic
Subject: Re: Boothole attack for Linux and Windows

Thanks Pero. I don't like info in the last paragraph. Is the reason for that the fact we have disabled secure boot in BIOS?
G

GORAN OBRADOVIC | VP ENGINEERING AND GM EUROPE
DOMINION VOTING
215 Spadina Avenue, Toronto, Ontario, M5T 2C7
1.866.654.8683 | DOMINIONVOTING.COM
866.654.8683 OFFICE (ext 401)